



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,184	03/24/2005	Takahiro Horiguchi	268669US26PCT	4352
22850 7590 01/25/2008 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER MACARTHUR, SYLVIA	
			ART UNIT 1792	PAPER NUMBER
			NOTIFICATION DATE 01/25/2008	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary

Application No.

10/529,184

Applicant(s)

HORIGUCHI ET AL.

Examiner

Sylvia R. MacArthur

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 29 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2005 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Terminal Disclaimer

1. The terminal disclaimer filed on 10/27/2007 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US Serial No. 10/529,191 has been recorded. Its acceptance is still pending review by the proper USPTO personnel.

Response to Arguments

2. Applicant's arguments filed 10/29/2007 have been fully considered but they are not persuasive. Applicant argues on page 6 that the ring heater support 160 is not a member that supports the ring heater 150 and it is "clearly" different from a transparent case that accommodates a heating portion. However, the claim does not recite the structure of the said transparent case nor does applicant argue how structurally the ring heater support 160 is different structurally from claimed transparent case.

3. Furthermore, it is noted that claim 1 was amended to recite that heater portion accommodates a heating element that is contained inside a transparent case made of quartz. This amendment necessitated the new grounds of rejection for claims 7-10 wherein the apparatus of McDiarmid et al (US 6,301,434) in view of Okase et al (US 6,399,922) fails to teach a UV protective glass window as recited in claim 7. The prior art of Aoyama et al (US 5,651,827) provides this teaching.

Information Disclosure Statement

Art Unit: 1792

4. The information disclosure statement filed 10/27/2007 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 5, 6, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDiarmid et al (US 6,301,434) in view of Okase et al (US 6,399,922).

Regarding claim 1: McDiarmid et al teaches a processing vessel (chamber 100) an opaque case (liner 164) see col. 7 lines 15-33, a heater portion 150, a holding member (118), and a rotational drive means. Regarding the rotational drive means: The citation of “rotational drive means for ...” invokes 112,6th (means-plus function). The examiner interprets the “rotational drive means” according to the disposed specification section [116] where rotational drive unit is recited. The substrate support 118 sits on a rotation ring 130 and is rotated by a rotation drive mechanism, see col.5 lines 17-37. McDiarmid et al teaches lift pins 116 (arm portions) are made of quartz in col. 4 line 2, the ring heater support (the transparent case) 160, and the ring heater 150 is made of clear quartz in col. 6 lines 53-61.

McDiarmid et al fails to teach a UV light source.

Art Unit: 1792

Okase ('922) teaches the use of a UV light source a heat treating apparatus. The motivation to provide UV light source 90 of Okase in the apparatus of Aoyama is that it is a suitable means of irradiation. Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to provide the UV light source of Okase ('922) in the processing vessel of Aoyama et al.

Regarding claim 2: Col. 4 lines 54-67 of McDiarmid et al teaches that the holding members are lifted by an elevational mechanism (lifter member). See Fig. 1A regarding the openings.

Regarding claim 3: The liner 164 of McDiarmid et al are cylindrical shaped and cover the periphery of the heater portion 150.

Regarding claim 5: It is anticipated that the internal space of the transparent case and the internal space of the chamber at the same time as both are exhausted via the same exhaust system as recited in col. 4 lines 7-21.

Regarding claim 6: McDiarmid et al teaches a ring/plate heater 150 made of SiC.

Regarding claims 11 and 12: McDiarmid et al teaches lift pins 116 (arm portions) are made of quartz in col. 4 line 2, the ring heater support 160, and the ring heater 150 is made of clear quartz in col. 6 lines 53-61.

7. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDiarmid et al in view of Okase et al as applied in claims 1-3,5, 6, 11 and 12 above, and in further view of Aoyama et al (US 5,651,827).

The teachings of McDiarmid et al in view of Okase et al were discussed above.

The combination fails to teach a UV protective window as recited in claims 7-10.

Aoyama et al teaches a processing vessel (chambers as illustrated in Figs.3, 5, 6, 9, 10,12, and 14-16, an opaque case (liner) see abstract, a heater portion 30a, a holding member (susceptor 7), and a rotational drive means.

Aoyama et al further teaches UV glass blocking windows that are part of the opaque liner, see Figs. 7 (element 20), Fig. 8 (element 18), Fig. 11 (1b), Fig. 12 (opaque portions), Figs. 14 and 16 (element18). The first and second windows are the transparent and opaque portions illustrated in each Figure listed above, see also col. 3 lines 38-65.

Regarding claims 11 and 12: The susceptor and pins (arm portions) of Aoyama are made of transparent quartz according to col. 8 lines 50-64.

The motivation to provide the combination of McDiarmid et al as modified with the prior art of Okase et al with the UV protective window of Aoyama et al is that the window allows for observation of the treatment of the wafer without the window affecting the heat treatment of the wafer in the heated region of the vessel. Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to provide a protective window as taught by Aoyama et al in order to observe the treatment of the apparatus of McDiarmid et al as modified by Okase et al.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO


Art Unit: 1792

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R. MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-Th during the hours of 8 a.m. and 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Sylvia R MacArthur
Primary Examiner
Art Unit 1792